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A VISIT TO LOCH SWEN, ARGYLLSHIRE.

BY T. M. PIKE.

HAVING been resident on the shores of this west country loch from February to May last, it has occurred to me that a few notes on the Ornithology of the district may be of interest to the readers of 'The Zoologist,' more especially as little information from this part of Scotland—during winter, at all events—appears to have been published.

Loch Swen is situated in Argyllshire, a little southward of the western end of the Crinan Canal, running in from the Sound of Jura, for a distance of about eight miles, in a tolerably broad sheet of water; it then breaks up into a number of heads, which run up another two miles amongst the hills—a beautiful bit of scenery. The narrow channels of the loch, winding round well-wooded islands, form sheltered bays and lagoons which the heaviest winter gales can scarcely ripple. At the mouth of the loch, stretching well out across the Sound of Jura, are the MacCormaig Isles—a number of rough craggy summits, as it were, of hills, upheaved above the level of the Sound, varying in size from the bare skerry hardly rising above the spring-tide level (the nesting-place of Terns) to islands large enough to pasture a few sheep in the hollows amongst the craigs. A well-known haunt for birds are these islands, and tolerable security awaits them here, as they practically reduce the Sound of Jura to half its natural width, thus producing a very rapid tide, which

rushes with many a swirl and eddy through the narrow rock-strewn channels of the isles, foaming with races and overfalls to such an extent that the surrounding inhabitants of Knapdale compare them—"*magnis componere parva*"—to that far-famed gulf, where "Coirebrechain surges roar," whose northern portal, the frowning island of Scarba, lies but a little distance to the north-west. Thus an approach to these islands in unsettled weather is anything but pleasant, and a landing on the outer and more exposed skerries impossible. The largest island, Eileam Mor, is interesting also from an antiquarian point of view, on account of the ecclesiastical remains on it, consisting, so far as I could see, of an old ruined chapel, part of whose vaulted roof remains intact, an ancient cross, and the effigy of an ecclesiastic carved in stone, and reclining beneath, in solitary state, save when a party of fishermen make the place their temporary abode in summer, when the channels amongst the isles absolutely teem with fish.

As we pass up the loch, not far above Castle Swen, on the left hand side is an inlet, consisting of a large muddy bay, which joins Loch Kiels on the Sound of Jura, the whole forming a capital feeding-place for wildfowl. Farther up are other inlets, more especially the Linne Vurich, where the waters of the loch rush on both sides of an island, over a shallow, into a large sheet of water two miles long, forming, when the waters within and without are at different levels, a dangerous rapid at spring tides. This, too, is a favourite place for wildfowl, Wigeon, and more especially the diving ducks, such as Goldeneyes and Scaups, and the Red-breasted Merganser. The way in which sea and land are interlocked in this part of Scotland must be seen to be appreciated, and to a lover of Ornithology is well worth a visit, as it is out of the ordinary route of the innumerable tourists who crowd the Scotch hotels during midsummer and early autumn.

In ornithological interest Loch Swen, owing to its muddy bays and inlets, stands high amongst west country lochs, though the West may be said to compare unfavourably with the East of Scotland in regard to the variety of birds which attract the puntsman, such as wildfowl and waders, although with sea-fowl and rock-birds the West is well supplied.

For instance, every winter when shooting on the East coast, I have always seen, if I have not shot, several Wild Swans. Two

winters ago I saw eight, in one lot, pitch in the Findhorn Bay, and shot one—a fine specimen—later on. In the winter of 1880-81 a flock of twelve pitched close to the village of Findhorn, but I happened then to be at a place farther along the coast, so they escaped molestation. Others I saw at the inlet I was shooting in, so that they must have been numerous on the coast generally. Now, here in the West, I have seen none, and the country people seem scarcely to know them. As to wild geese, the Brent, which affords so much sport on the east coast, is decidedly scarce, and its place is sparsely supplied by the larger Grey-lag, which is locally numerous, but prefers green fields to the puntsman's domain—salt water.

Ducks—*i. e.*, the Common Duck and Mallard—are tolerably plentiful in the West, and on Loch Swen the pretty little Teal is abundant, and the Wigeon in some places numerous. Last winter I frequently saw over one hundred together, which for mild weather is pretty fair. The Golden-eye is a very common duck in the West, the Scaup not so plentiful, the Tufted Duck conspicuous by its absence, and the Sheldrake's variegated plumage a rare sight, there being but half-a-dozen pairs on this large loch—contrasting ill with the sandy plains of Moray, where I have seen at least three hundred together. The Velvet Scoter was to be seen, though not numerous; the Common Scoter I did not properly identify, but the Eider, as the spring came on, became numerous at the mouth of the loch and amongst the isles. That handsome bird, the Long-tailed Duck, whose sonorous cry rings out so frequently over the waters of the Orcadian sounds, and bays and firths of the north-eastern coast, was not met with; perhaps we were too far south, for I fancy this bird is common enough in the Outer Hebrides.

The Red-breasted Merganser was about the commonest bird we had. This bird is about the most destructive to Trout of any in the Highlands, and as it is very prolific—sometimes having a brood of a dozen—the mischief it does is hardly repaid by the gratification afforded by the undoubtedly handsome appearance of the male bird. When not much molested, Mergansers are fond of sitting ashore and basking on the rocks, in sheltered nooks and corners, and many a time, when cautiously pushing round some bay in my punt, I have approached within a few feet of them before they observed me. At such times it was amusing

enough to notice the ridiculous scramble and rush they make to get away, sometimes going head first under the surface, but usually flapping heavily into the water in their efforts to get upon the wing, the fright rendering still more troublesome their usually laborious attempt to accomplish this. In similar circumstances, I have seen a Heron so utterly unnerved by my sudden appearance, within a yard or so of where it was standing,—needless to state this was behind a bank,—that it ran off, flapping its wings uselessly and uttering loud screams, for a considerable distance before it sufficiently recovered presence of mind to use its mighty pinions in the legitimate way.

It is, however, more particularly in the waders that the divergence between the East and West of Scotland is most manifest. Here the Oystercatcher and Curlew are most conspicuous; but even their numbers are few, compared with the congregations of these birds to be seen in Nairn and Moray, while the multitudinous swarms of Knots and Godwits that delight the puntsman's eye on those same sandy shores are not to be found in the West at all, at least in winter; for I believe an occasional spring and autumn migrant does turn up here. Of other waders I saw a few Redshanks, Dunlins, Ringed Plovers, Turnstones, and, on the rocky skerries, occasionally little parties of the Purple Sandpiper, more particularly when the time for their vernal migration came on, it being their habit to collect together before their departure for the north.

The Heron was well represented, there being a tolerably large heronry in a sheltered bay at the landward end of the loch. Gulls were numerous enough, but only the common species, the Great and Lesser Black-backed, Herring and Common, and the ubiquitous Black-headed Gull being the representatives of the family; the only approach to a rarity being an immature Glaucous Gull that I saw pitched on a sandy beach at the mouth of West Loch Tarbert.

In the memorable November hurricane of last year, amongst other birds, a number of Petrels were driven ashore. I picked up about a dozen at Loch Killisport, a little to the south of Swen, where a party of us had a large winter shooting. These were all the common little Storm Petrel, but I saw accounts in the Scotch papers of the Fork-tailed Petrel being picked up at other places on the west coast.

The rock-birds, most of which come right up the loch in their fishing expeditions, were Razorbills and the Common and Black Guillemot; the last named is comparatively rare, for in Orkney in winter it is more frequently met with than the other. To supply the numerous fish-eating birds in this loch there must be a tolerable supply of fish, and it was a pretty sight to watch the different species, when—as often happens—a lot of small fry would break up to the surface. A Gull, probably, hovering in the air, would first make out the prize, but its first dart downwards to secure its booty is the signal for its congeners to hurry up in swarms, and a gyrating column of Gulls is rapidly formed, flying round and round, broken frequently by individuals shooting down to the water, as an unfortunate fish comes to the surface. The keen eyes of the Razorbills and Guillemots discern this at once; they know that under that column of Gulls are the fish. The Red-breasted Mergansers are equally alert. Up they all fly and splash heavily into the water, right under the Gulls, and in a few minutes, where you could not see a bird, you may now see fifty; and, unless one wantonly disturbs them, they will permit you to approach within twenty yards to watch them as long as the fish remain.

Of Grebes there were a few of the Great Crested and Sclavonian species, and the common Dabchick; these were none of them numerous. Possibly the Eared and Red-throated Grebes were there, but, unless shot, one cannot identify them. The two kinds of Cormorants were, of course, common.

The Divers proper were well represented too, the Great Northern and Red-throated being numerous; the Black-throated I did not identify, but, as in the case of Grebes, unless in full breeding plumage, one cannot at a glance distinguish between individuals of this genus. There is a considerable difference in the habits of even birds so similar in appearance as the Great Northern and Red-throated Divers. The larger bird is more local in his habits; he takes up his winter quarters in some place in October or November, and earns his living there or thereabouts until his departure for his northern breeding haunts, regardless of wind, weather, fish, or anything else. Such powerful birds as the Gannet and Red-throated Diver occasionally succumb to stress of weather and get washed ashore. Not so the Great Northern Diver; no one ever hears of his getting driven ashore,

unless previously struck by shot. In winter this bird rarely flies; the water is his domain, and he adheres faithfully to it, not but what he can use his wings well enough if he chooses. I have seen one pursued by boats for two hours, shot at perhaps twenty times, and then, with heavy beats of his wings striking the water for perhaps ten yards, get up in the air, and go out of the harbour at a rate that would do credit to a Swift.

The Red-throated bird is more of a vagrant; he follows the fish round the coast, and in one day I have seen several hundreds of these birds where a week before only a few scattered individuals would be met with. If frightened this bird trusts to his wings to escape, and rarely dives, save when you happen to be dead to windward of him in your boat, as he then knows that he must rise to windward, and so would be unpleasantly near. So in Loch Swen, at times when rowing up from the mouth in my punt, in the twilight, I might see two or three dozen Red-throated Divers flying rapidly down the loch towards the open Sound, as they do not care to trust themselves in inland waters during the night. On other days not one of these birds could be seen, but the Northern Divers were constant in their attendance, and every day one might see several pairs of them in different parts of the loch. I like to see these fine birds about, and do not molest them, so beyond quickening up a bit as I passed they paid little attention, occasionally saluting me with their weird long-drawn note, which resounded far and wide over the quiet waters long after the birds themselves were lost to sight. This wild cry, to my ears at least, is one of the strangest sounds proceeding from the vocal organs of birds, and to superstitious minds may well account for sundry tales of Water Kelpies in Scotland. Still, weird and melancholy as is the cry of this large bird, it harmonises not unfitly with the wildness of the scenery, where in front the high rounded summits of the Jura hills look boldly over the broad Atlantic; while behind, in far distance, the double-crested ridge of lofty Cruachan, clad in its white mantle, towers above the neighbouring hills; and on all sides, as far as eye can reach, are displayed to view the islands, lochs, and moorlands of the Argyllshire seaboard.

THE BIRDS OF BRECONSHIRE.

By E. Cambridge Phillips,
Member of the Woolhope Naturalists' Field Club.

(Concluded from p. 220.)

Wild Swan, *Cygnus musicus.*—At one time probably visited Llangorse Lake regularly in severe weather. The last birds seen there, as recently reported to me by a fisherman who still frequents the lake, was about twenty years since, when he saw six there one winter's morning, but has never observed any since. About fourteen years ago, in riding down the beautiful valley of the Usk towards Talybont I myself saw a single Swan, probably a wild one, flying very high in the direction of the sea. The grand and powerful flight of that snow-white bird, cleaving its way through the air, I shall not easily forget.

Greylag Goose, *Anser ferus.*—Only occasionally seen in severe weather, and then passing over at a great height. A few have been shot from time to time, and a friend of mine tells a good tale of a gamekeeper of his seeing some Geese in very hard weather in a meadow, and in an excellent position for stalking them, but after watching them for some time he came to the conclusion they were tame birds until undeceived by their flying away.

Brent Goose, *Anser bernicla.*—I have received reports of individuals of this species having been killed in this county, but I imagine they must have been exhausted birds detached from flocks, or, what is more probable, driven inland by the violence of some storm, the Brent Goose being essentially a bird of the sea-coast.

Sheldrake, *Tadorna vulpanser.*—Has been obtained here from time to time, although rare. Three winters ago one was seen, close to this town, on the Usk, and others have been killed on the Wye. It is not generally a difficult bird to approach, and its bright colours render it very conspicuous. It breeds all along the sandy coasts of South Wales, and passengers crossing the Severn in the steamboat at Portskewett may often observe it, as it is fairly plentiful in that neighbourhood.

Wild Duck, *Anas boschas.*—Common, breeding all over the county on the numerous hill-bogs, and in quiet places adjoining

our streams. I have flushed a Wild Duck in a green lane not far from the Usk, and from her movements, as she declined leaving the place, allowing me almost to catch her, I am certain she had a nest in the hedge there, but not wishing her to forsake it, I did not further disturb her. A great many breed in the bogs about Dovynnock, and the large bog called the Trath, near Brecon, is a favourite place for them. Some years since, happening to be on the highest point of the hill near Merthyr Cynog, and walking over a small bog, an old duck suddenly rose near me, and looking down I saw a young one, quite grown and in full feather, squatting in a little "form" in the reeds, like a hare, its neck drawn back, its head resting on its back, and its tail up, evidently endeavouring to make itself look as small as possible. I put my hand cautiously down, and easily caught it, when it seemed all at once to develop into a full-grown, fully fledged Wild Duck, in excellent condition; so I and my old retriever, who evidently considered something unusual was up, beat the bog carefully, and before we left he brought me five more full-grown young ducks, which with the one I had caught myself, made no slight weight to walk down to the shooting-box with—two miles off and more. To this day I cannot make out why they did not fly, as it was the first week in August. The Wild Duck is on the increase here, and I account for it from the fact that so many young birds are too strong on the wing to approach on the 1st August (the "close time" for wildfowl in the county being from the 1st March to that date). Perhaps it would be better to make it the 1st February, for if the weather is mild the ducks are generally paired during this month.

Shoveller, *Anas clypeata*.—Very rare. The only instance that has reached me of its occurrence here is one killed on the Wye, near Hay.

Pintail, *Anas acuta*.—The same remarks apply to this as to the preceding bird. One has been killed on the Wye, near Hay, and, with the last-named bird, is now, I believe, in the possession of Mr. Baskerville, of Clyro Court, who has kindly supplied me with the above information. I also, about twelve years since, saw a Pintail on the Gludy Lake, near Brecon, in company with a small flock of Wild Ducks.

Wigeon, *Anas penelope*.—Common in the winter on Llangorse Lake, where in hard weather it congregates in numbers, but is scarce elsewhere in the county. Occasionally a few visit the

Gludy Lake, and a very few frequent the Usk and Wye in severe weather. I have never seen it on any of the mountain bogs, and, I need hardly add, it never breeds with us.

Teal, *Querquedula crecca*.—Fairly plentiful with us, and breeding sparsely in several places in the county. I have found its young in a very small and deep pond called by us the "Teal Pond" on the Eppynt Hill, near Merthyr Cynog. They seem to have taken a great liking for this small pool, and I invariably found a flock there in the winter, and a pair nested there regularly. They breed in a large bog near Cray, on the Trath bog near Brecon, and on the large bog at Onllwyn, besides other places. I have little doubt that, if they had anything like quiet, they would breed at Llangorse in some numbers. They are occasionally plentiful there in the winter, but I do not think these can be birds reared in the county. A few breed on other parts of the Eppynt Hills.

I may here remark that I have seen two Garganey, *Querquedula circia*, believed to have been killed on the Wye, near Hay, but as there is some doubt about it I cannot with certainty include the species in my list.

Pochard, *Fuligula ferina*.—Occurs on Llangorse Lake in the winter months; it has also been killed on the Usk and Wye, but is very uncommon on both these rivers.

Scaup, *Fuligula marila*.—A very rare duck with us, but visits us occasionally. Mr. Alfred Crawshay shot one on the Usk last winter. Some years ago I killed a Scaup under rather singular circumstances in Wiltshire. I kept some very small black East Indian ducks on a pond quite in the country: the man who looked after them told me that a strange duck was with them, but was very wild. I was returning from snipe-shooting at the time, and going to the pond the stranger immediately dived, and I killed it on its reappearance with a charge of snipe-shot, and found it was a female Scaup in perfect plumage. Doubtless it had mistaken the tame black ducks for a flock of its own kind.

Tufted Duck, *Fuligula cristata*.—Quite as rare as the preceding, though occurring here at intervals. One was shot on the Wye at Clyro, near Hay, and Mr. Williams-Vaughan has another in his collection that was killed in the county. Mr. David Thomas has also a specimen procured on Llangorse Lake, where

years ago I have no doubt our rarer species of ducks were more frequently found.

Goldeneye, *Clangula glaucion*.—Very rare indeed. One has been obtained on the Wye, near Hay, and another by Mr. A. Crawshay on the Usk.

Smew, *Mergus albellus*.—This pretty little bird sometimes visits Llangorse Lake. I have had one brought me that was killed there, and Mr. David Thomas, of this town, has a very good stuffed specimen obtained at the same place.

Red-breasted Merganser, *Mergus serrator*.—Occurs very rarely with us in severe weather, both on the Usk and Wye. I have seen the skin of a beautiful male which was shot on the Wye, near Erwood.

Goosander, *Mergus merganser*.—A rare winter visitant, though of more frequent occurrence than the last-named. From what I can learn, they were formerly often observed on the Usk in the winter season. Mr. Williams, when living at Manest, has often shot them there. Lower down the river, at Talybont, Mr. Alfred Crawshay has killed several female Goosanders and one male; and, still farther down, two or three have been shot by Sir Joseph Baily at Glanusk Park. They have also occasionally been seen and killed on the Wye.

Great Northern Diver, *Colymbus glacialis*.—Many years since the late Mr. Duncan, of this town, shot a beautiful male bird on Newton Pool, close to Brecon. Mr. David Thomas has also a pair from the Usk near Brecon. Mr. A. Crawshay has observed it at Llangorse, and last winter one was killed there and two others seen. Some specimens have also from time to time been obtained on the Wye, near Hay and Glasbury.

Black-throated Diver, *Colymbus arcticus*, & Red-throated Diver, *C. septentrionalis*.—I have only seen one Black-throated Diver, a stuffed specimen, believed to have been killed on the Wye, near Glasbury. I have never actually observed either, but it is very probable that occasional birds of both kinds very rarely visit us from time to time, but escape notice, and so are unobserved and unreported.

Great Crested Grebe, *Podiceps cristatus*.—A special haunt of this bird is Llangorse Lake, where at one time it must have been quite plentiful. It is still fairly common there, breeding regularly, but in no other place in the county that I am awar eof.

Its shy and retiring habits, its wonderful sight, and diving powers, have alone preserved it from extirpation; but with all these in its favour it often gets killed, as the many stuffed specimens both here and elsewhere so abundantly testify. Mr. Alfred Crawshay, shooting round the lake the year before last, and noticing a great commotion in the reeds made by a Grebe, fired at it, and on rowing up, found he had killed a female Great Crested Grebe and two young ones, which at the time he fired must have been sheltering under her wings. He has had the three stuffed to commemorate the incident. It is a pity this bird should be killed, for on a large lake like Llangorse it would do actual good by keeping down the extraordinary number of small roach and perch that swarm there.

Little Grebe, *Podiceps minor*.— Common throughout the county. It breeds on Llangorse Lake, and occasionally on smaller lakes and ponds here, but in sparse numbers. It may be often seen on any large pool in the Usk, or Wye, in the winter, diving incessantly. I have never noticed it on the deep bogs of the county, nor on any of the hill-streams.

Guillemot, *Uria troile*.—I can record the occurrence of one specimen, which was picked up dead after a storm in the neighbourhood of Llanwrtyd, in this county.

Cormorant, *Graculus carbo*.—I think visited us formerly oftener than is generally supposed, probably following the course of the river from the sea in search of Trout. I have seen one on Newton Pool, near Brecon, but not of late years. Two or three have been killed at Glanusk, on the Usk, the seat of Sir Joseph Baily, Bart. Mr. Alfred Crawshay has observed it at Llangorse, and other specimens have been obtained in this county. It has, however, greatly decreased here, and is now seldom seen. The Shag, *G. cristatus*, does not come so far inland, but keeps to the coast.

Gannet, *Sula bassana*.—Miss Lloyd tells me that at Nantgwilt, some years ago, she picked up a fine Gannet alive (evidently blown in by a storm), and kept it alive for some little time by feeding it with fish and periwinkles. The nearest sea-coast must be at least thirty miles from where the bird was found, and shows the fearful power of the storms that occasionally occur on our iron-bound coasts. Within the last few years a man passing by Cefn Park, near Brecon, seeing a large white bird in a wood

there, fired and killed it; he brought it to Mr. Williams, late of Manest, who had it preserved. On inspecting it I found it to be a Gannet, an old bird, in most beautiful plumage, and it had evidently arrived at its strange resting place in the same manner as the first-named specimen. I must not omit to mention that Cefn Park is certainly forty miles from the sea, as the crow flies.

Common Tern, *Sterna fluviatilis*.—May often be seen at Llangorse, skimming over the expanse of the lake with its peculiarly easy and graceful flight. A connection of mine shot a solitary bird of this species on the summit of the Eppynt Hills. It has also been obtained on the Wye and Usk, but is, I regret to say, only an occasional summer visitant with us.

Kittiwake, *Larus tridactylus*.—A specimen of this Gull was killed on Llangorse Lake. It is, however, very scarce here.

Common Gull, *Larus canus*.—Not uncommon in the county, especially after a stress of weather. I have observed it on the Wye, near Builth, at Llanwrtyd, occasionally also on the Usk, and it may often be seen at Llangorse. It takes good care of itself when inland, being fully alive to the fact that its large breadth of wing and snowy plumage renders it most conspicuous.

Herring Gull, *Larus argentatus*.—I have seen it here but very seldom. I remember fishing in the Wye, at Erwood, late one beautiful summer evening, when a very large Herring Gull flew slowly up the river and passed close over my head. When exactly above me he turned his head on one side, without deviating in the slightest from his course, gave me a look, as much as to say, "Only a harmless brother angler," and passed on his way without the slightest apparent concern.

Manx Shearwater, *Puffinus anglorum*.—One of these birds was picked up dead close to the border of the county, near Llanwrtyd. It was fortunately preserved, and I have often inspected it. Of course it was only borne there "on the wings of the wind."

Storm Petrel, *Procellaria pelagica*.—This is the last bird I have on my list, excepting a few which have been reported to me too recently to be inserted in their proper places, and whose occurrence I propose to notice presently by way of "Addenda." A specimen of this homeless little wanderer was picked up dead

on the Wye, at Clyro, near Hay, some years since. Last winter another was picked up at the Skreen, Erwood, on the borders of the county, by Mr. Williams Vaughan, jun., after one of the violent storms of last winter; and at the same time a third was found dead on the "Captain's Walks," one of the most favourite promenades of our town.

ADDENDA.

Honey Buzzard, *Pernis apivorus*.—Another Honey Buzzard was killed at Dany Park, near Crickhowell, by Mrs. Crawshay's keeper either in 1871 or 1872. I am indebted to Mr. A. Crawshay, of Llansantfraed, for this information.

Great Grey Shrike, *Lanius excubitor*.—One was seen at Tredustan, near Tregunter, in November last, by Mr. Roche, of Tregunter, and his brother. It was easily recognised by both of them, they having often observed it on the Continent. It has also been observed in the county by Miss Lloyd, of Llandefailog, Brecon.

Hooded Crow, *Corvus cornix*.—One was killed here last winter on the hill called the "Allt," near Buckland, by Cross, the keeper. It is most rare with us. I have never yet seen it here, and its occurrence so far west is most unusual.

Hoopoe, *Upupa epops*.—In addition to the two specimens already mentioned, I have to record a third which was killed in the neighbourhood of Llangorse by Mr. Penry Lloyd, who then lived at Brynderwen, and who was kind enough to give me this information.

Wood Wren, *Phylloscopus sibilatrix*.—This bird has been more numerous than usual with us during the present summer.

Grey Phalarope, *Phalaropus fulicarius*.—One killed on the Wye, near Glasbury. I have seen this bird, which has been preserved; it is in winter plumage.

ORNITHOLOGICAL NOTES FROM EAST NORFOLK.

By J. H. Gurney, Jun., F.Z.S.

The following notes on an expedition to Gunton Lakes on June 13th will perhaps be of interest to naturalists.

I cannot help thinking that the Heron is increasing in numbers, and at Gunton there is a colony of thirty-eight nests on an island, fairly secure from vermin, though Foxes and Otters are said to go there, and one of the latter was recently poisoned with two strychnined Bream. When Mr. Harting published his list of British Heronries (Zool. 1872, p. 3264), which I find very valuable for reference, Gunton heronry had been only recently established, and was said to boast thirty-one nests. There are now about thirty-eight on alders, and as the island is small they can hardly increase beyond this number. But Mr. Southwell informs me that a splendid heronry has sprung up at Mautby, where there are something like one hundred nests; and I hear from Mr. Norgate of small heronries at Billingford and Bylaugh, and from Mr. Newcome of six nests at Wilton, near Brandon. The nest recorded at Hempstead (Zool. 1880, p. 366) was not followed by any more, and the same year a pair or two nested at Sheringham, but have now ceased to do so.

Gunton Lake is a great home for Canada Geese; at least one hundred live there in an unpinioned state, roam about the country, and are often shot. There are also a great many more at Holkam Park, Blickling Park, and Melton Park, and it need hardly be said that not the slightest value attaches to any Canada Goose—however wild it may seem, and however unsoiled its feathers—which may happen to be killed on the coast in this part of England. We had an exciting chase in a punt after a very young one, which we eventually captured and pinioned; but except a few which are pinioned in this way, none are disabled from escaping. On the Heron's island I was sorry to see five or six deserted nests, all containing eggs, amounting to about forty. I suspect that the Foxes were accountable for this, for I know from experience that a Canada Goose is not too large for them to kill.

There is only one pair of Great Crested Grebes at Gunton, and the Rev. Henry Lubbock, the Rector of Gunton, informs me

that they annually appear about the 5th of March. I do not know any prettier sight than to see the old hen Grebe, with her young ones on her back, with her beautiful crest and tippet raised to the utmost in her agitation, and I was not sorry that the eggs were hatched off, for the sake of seeing this, to me, more interesting spectacle. On pulling up the nest, for the chance of an addled egg being left behind, I found the middle of it quite hot,—in fact, a regular natural incubator,— and I fancy that the bird must have left it just before we saw her.

Two of the Honey Buzzards mentioned in my last notes on Norfolk birds (Zool. 1881, p. 487) are dead. We obtained wasps' nests for them far into the winter, but "butcher's lights" finally killed them. My father has been feeding the third one for some time past entirely on sparrows' eggs. When I had them I tried them with raspberry jam, which they ate, but their favourite food was the larvæ of wasps. The insect itself is not touched—at any rate, when the larvæ are obtainable. The terrible gales, which bereft us of so many fine trees in the autumn, blew down their cage, and a singular instance of tameness in a bird of prey was exhibited by one of them, which, possessing full powers of flight, allowed itself to be recaptured a day or two afterwards by a boy holding out a plate of meat. They are very quiet, sociable birds, but perhaps the Buzzard recognised in the boy the same lad who had fed it a few days before. Although it was late in November, when they escaped, their instinct led them to two wasps' nests, and the dexterity with which they scooped them out showed how well adapted their comparatively feeble beak is for the purpose.

It seems desirable that the interesting question raised by Mr. E. T. Booth, in 'The Field,' whether the adult male Norfolk Plover has, or has not, a fleshy tubercle at the base of the upper mandible in the spring, should be settled this summer, and with a view of contributing a small mite of information on the subject, I would say that there are at present at Mr. Dack's, the bird-stuffer at Holt, a male and female Norfolk Plover killed about May 3rd and 15th, and which Mr. Dack, with whom I had had some previous conversation on the subject, carefully dissected. Neither of these has, or had, the slightest trace of a rounded knob or protuberance; but there are also in the shop a pair taken three or four years ago (Mr. Dack believes in July), being set up with the nestling and eggs, and one of them shows a very clear

indication of the protuberance; it is nothing more than an indication, but still one can well imagine that when the bird was alive it may have been as large as that in Mr. Booth's specimen.

On the 4th of June, near Cromer, a bird was seen by Mr. I. W. Cremer, which I have no doubt was a Night Heron. The last shot in Norfolk was at Ranworth on July 21st, 1880,—a young bird, indeed apparently but a few months old,—and has not been recorded. The bird seen by Mr. Cremer settled on a pond about a quarter of a mile from the sea, and, though twice shot at, escaped.

Mr. W. Eagle Clarke's remarks on the tail of the Tengmalm's Owl shot at Whitby (*ante*, p. 177) led me to examine the tail of one which I got at Cromer Lighthouse on the 30th October last, as recorded by Mr. Stevenson (*ante*, p. 115), and I find that, as in the bird obtained at Whitby, there are five, and not four, pretty distinct bars formed by the spots on the tail. I cannot say that my bird agrees very well with the plate in Dresser's 'Birds of Europe,' taken from an adult male from Sweden, and in which, besides minor differences, the bird is drawn with ears, or rather horns, of which I see no signs.

Mr. Clarke, in another part of his interesting paper, mentions that the name "Rock Goose" is applied in Yorkshire to the Brent. I have never heard it called anything but "Brant Goose" at Blakeney, and that has been the Norfolk name for it since the days of the L'Estranges, according to whose 'Household Accounts,' extending from 1519 to 1578, the value of a "Brante" was twopence. But I have many times heard it called "Road Goose" at the mouth of the Tees, in Yorkshire, a name which, meaning perhaps nothing more than that these birds frequent harbours and roadsteads more than the Grey Geese, has been persistent in that particular locality since the time of Willughby ('Ornithology,' Book iii., p. 361). Mr. Dresser says that in Holland the Brent is called "Rotgans."

[It is curious that neither Willughby nor Pennant, to say nothing of later naturalists, have hit upon the origin of the old northern name of this bird, *Rotgans*, *Radgaas* (of which "Road-goose" is doubtless a corruption), signifying "Root-goose," its chief food being the root and lower portion of the stem of aquatic plants. The word occurs in the Durham Household Book, under date 3rd Feb. 1534:—"Item, 3 Februarii, 1 Rutgoys, 3d."—Ed.]

ORNITHOLOGICAL NOTES FROM NATAL.

By Majors E. A. Butler and H. W. Feilden, and Capt. S. G. Reid.

(Continued from p. 258.)

Hyphantornis spilonotus (Vigors), Spotted-backed Weaver Bird.—A male obtained by Reid on the banks of the Tugela River, near Colenso, on the 21st November. A colony of these birds was breeding in some tall trees close to the river; the nests were suspended from the topmost branches, and resembled those of *H. velatus*, but were inaccessible.

Hyphantornis ocularius (Smith), Smith's Weaver Bird.—Reid shot an immature male in some very dense bush near Durban, on December 26th; one or two others were seen at the same time.

Euplectes xanthomelas (Rüpp), Yellow Kafir Fink.— Obtained commonly throughout our stay in the country. The sexes resemble each other closely in their winter dress, the deep velvety plumage not being completely assumed by the males till September or October.

Euplectes oryx (Linn.), Red Fink.—Common and universally distributed. Specimens of the male bird were obtained in all stages of transition from winter to summer plumage, in October and November. "Found breeding in considerable numbers along the reedy streams near Maritzburg (Richmond Road), and eggs obtained in December, though at that time many nests contained young birds" (R). "Also breeding in the same places in March, so it must nest twice" (R). The nests are constructed of grasses, domed with a side entrance, and usually placed among reeds, on the stems of which they are formed, about four or five feet from the ground-level, and at the water's edge. Eggs taken at Richmond Road on the 11th December are rather pale greenish blue, unspotted; they measure 7·55 in.

Vidua principalis (Linn.), Dominican Widow-Bird.—Very abundant all over the colony; found in flocks, both in winter and summer plumage. Specimens were obtained from June to December, the males assuming their long tail feathers and strikingly handsome breeding plumage in September and October. As in *Chera procne*, the long-tailed males, even in December, were singularly outnumbered by the tailless females and young males, giving rise to the idea that the species is polygamous.

The explanation may, however, be the same, *viz.*, that the young males do not assume their nuptial livery during their first, and perhaps their second, year. Legs and feet grey. "Bill coral red or scarlet, orange in some cases" (B).

Urobrachia axillaris (Smith), Scarlet-shouldered Reed Finch.—Extremely common at Richmond Road in December, where it was breeding. The nest is a slight, but strong, construction of grasses, nearly spherical, with a side entrance, built among the reeds. Eggs bluish green, tinted with olive, with large blotches and a few small spots, some clear dark olive, others obscured, as if washed over by the ground-colour; ·8 in. by ·6 in. Seen at Durban; also a single specimen at Calleba's Laagte, about twenty-five miles from Newcastle, but not noted further north. Butler did not notice it north of the foot of the Karkloof.

Niobe ardens (Bodd.), Red-collared Reed Finch.—Generally distributed and fairly common. Some specimens of the male were obtained near Newcastle in November, with the collar orange, rather than scarlet, but this is doubtless only an intermediate stage.

Chera progne (Bodd.), Long-tailed Widow-bird; Kaffir Chief.—Called by the Kaffirs "Saca-bulo." One of the commonest birds in the upper portions of the colony, but not observed in any great numbers below Howick, or rather Riet Spruit, a few miles lower down on the Pietermaritzburg road. Reid met with a small colony on the downs near Richmond Road Station in December, but did not observe them elsewhere in that neighbourhood. They roost in hundreds, or even thousands, in the reedy "vleys," flock after flock pouring in from all sides about sundown till the whole place is alive with them. The males begin to assume their summer livery, with its long tail-feathers, as early as August, but some of them are not in full breeding-plumage as late as October. They were still in flocks, and apparently not nesting, when we left Newcastle in November. It would seem that the black plumage and long tail are not assumed by the males during their first year (and perhaps their second), for specimens were obtained in the immature or female dress as late as the 26th October, which could not possibly have subsequently gone through the various stages; and this would appear to receive confirmation from the marked preponderance of the brown tailless birds over the long-tailed males in the various flocks. So great, however, is this preponderance that it

can really only be satisfactorily accounted for by assuming the species to be polygamous. Butler inclines to this theory, from having so constantly seen parties of what appeared to be female birds following single males in nuptial plumage, and we can only regret that we were not long enough in the country to observe the nesting of these singular birds. Mr. R. B. Sharpe, in his second edition of Layard's book, is of opinion that all the *Viduas*, as well as the present species, are polygamous. Some more observations are necessary, however, to confirm our suspicions on this point. There is a marked difference in size between the males and the females, the former being considerably the larger. After a severe hailstorm in October, Butler found several of these birds near Newcastle so injured by the hailstones that they were unable to fly. He observed a cream-coloured specimen in one flock, but failed to procure it.

Vidua principalis (Linn.), Common or Dominican Widow-bird.—Very abundant all over the colony; found in flocks, both in winter and summer plumage. Specimens were obtained from June to December, the males assuming their long tail-feathers and strikingly handsome breeding livery in September and October. As with *Chera progne*, the long-tailed males were in small proportion to the brown females and immature males, and we are inclined to the belief that the species must also be polygamous. We did not, however, meet with it actually nesting during our stay in the colony.

Estrelda astrild (Linn.), Common Waxbill.—Everywhere common, in small flocks, as a rule, though quite a cloud of them occasionally congregate together. Nests found at Richmond Road in December were tenanted by several birds; they were built on the ground in thick tufts of grass, composed entirely of fine grasses, with a curiously placed entrance just above the ground-level. The eggs were of a lovely pink colour before being blown. From one nest examined by Reid five or six birds were seen to fly. Are they also polygamous, like the *Viduas*? Mr. R. B. Sharpe appears to think this possible.

Ortygospiza polyzona (Temm.), Little Barred-breasted Finch.—These pretty little birds are very common, both winter and summer, round Newcastle, and as far south as Ladysmith, but they do not seem to extend to the coast-line. For an excellent account of this species we may refer ornithologists to the notes

published by Mr. F. H. Guillemard in 'The Field' of November and December, 1880. We did succeed in shooting specimens on the ground, one day, after much patient watching, but they move about like mice when once settled. They are strictly terrestrial in their habits, never settling, as far as our observations go, on anything but the ground. On the wing they are very noisy, the whole flock keeping up an incessant chattering, when flushed, until they again alight. These little birds were always in the most excellent condition, their crops being invariably crammed with small grass-seeds. The sexes do not vary very much, but the male has the under parts of a brighter colour and the throat considerably blacker than the female. Iris, orange; bill, upper mandible dark red, blackening at the base, lower mandible bright coral-red; legs and toes, pale brown (R).

Ortygospiza subflava (Vieil.), Sanguineous Waxbill.—"Lieut. Giffard and I met with a small flock near Newcastle in September, very shy indeed, and obtained several specimens, both male and female. I was somewhat surprised at meeting with a large flock also, frequenting a reed-grown stream at Richmond Road, near Pietermaritzburg, in December. They stuck pertinaciously to the thick covert, perching, however, on the reeds, and not on the ground, like *O. polyzona*, and I had to shoot my specimens on the wing. Not met with on any other occasions. The note is not unlike that of *O. polyzona*, but rather less harsh and grating. In flight the crimson rump is very conspicuous, and serves to distinguish the species from the last-named" (R).

Ortygospiza Dufresnii (Vieil.), Dufresne's Waxbill.—Butler saw several of these birds in a cage belonging to a lady he met on board ship returning home, and she told him that they were caught near Pietermaritzburg, and that they were not uncommon in that locality. He obtained one of these birds, which died of cold shortly after reaching England.

Ureginthus phœnicotis (Swains.), Blue-breasted Waxbill.—Found in considerable numbers by Reid in the bush near Ladysmith in August, and at Colenso and Blaauw Krantz in November, in which latter locality Butler noticed it. Not observed in the Newcastle district.

Passer diffusus, Smith, Southern Grey-headed Sparrow.—A small flock frequented some large Syringa trees near the Ingagane Drift in the winter, and specimens were obtained there in July by

Reid. Observed in a large flock at Ladysmith in August, in small numbers at Dundee in October, and appeared to be numerous and generally distributed in November from Ladysmith, where it was very abundant (feeding in the roads like the common House Sparrow of Europe), as far down as Howick, where we noted its presence in November.

Passer arcuatus (Gmel.), Cape Sparrow.—Not seen in mid-winter in the Newcastle district, though probably it remains there the whole year round. First observed by Butler in September, when he found them in scattered pairs, one pair attaching itself to each farmhouse for the breeding season. He found them very shy, but obtained specimens. If one of the pair was shot another generally took its place within a few days, but where its successor came from is a puzzle, as these farmhouses are often miles apart, and it is difficult to understand how a disconsolate widow or widower could find another mate in so short a time. One pair were observed building in a low orange tree in a garden within a few yards of the front door of a farmhouse. Nest similar to that of the English House Sparrow, but only six feet from the ground. Reid met with a pair in a thick patch of bush some distance from any buildings, the male being obtained, but no nest was observed. "Iris, dark brown; bill, black; legs and feet, dusky plumbeous" (B).

Poliospiza gularis (Smith), Streaky-headed Grosbeak.—A male, developed for breeding, obtained by Reid near Colenso on the 21st November.

Crithagra scotops, Sundev., Sundevall's Seed-eater.—Butler found this species not uncommon in the kloofs on the Drakensberg, near Newcastle, in August. It associates in small flocks, and has similar habits to *C. canicollis*, but is more of a woodland species.

Crithagra canicollis (Swains.), Cape Canary.—Common, both in winter and summer, in the colony. In the cold weather it frequented the bush-grown kloofs in the Drakensberg, near Newcastle, and as the breeding-season approached was more often found in the open veldt among weeds and scrubby bushes. Lieut. Giffard took a nest containing fresh eggs in a bush on the bank of the Incandu, on the 25th October. Reid found numerous nests containing fresh eggs at Mooi River on the 24th November; these nests were chiefly built in the pendant branches of willows overhanging the river.

Fringillaria flaviventris (Vieil.), Golden-breasted Bunting.—Reid obtained two specimens at "Guinea-Fowl" Kop, near Ladysmith, on the 21st August; there were a good number about, frequenting the bush at the base of the hill.

Fringillaria capensis (Linn.), Cape Bunting.—Not uncommon in the Newcastle district, where we all obtained specimens, in July and October.

Fringillaria tahapisi (Smith), Rock Bunting.—Specimens obtained at Newcastle by Butler, and at Ladysmith by Reid, in June, July, and August.

Certhilauda rufula (Vieil.), Rufous Long-billed Lark.—Extremely abundant about Newcastle, found in small flocks about the open veldt, generally where there are ant-hills, or loose rocks among the grass. Flies low and rapidly, displaying its white-tipped tail very conspicuously, and dropping with astonishing suddenness into the grass. Nest very small indeed, placed under a slightly projecting lump of earth, or bit of coarse stunted grass. Eggs three, very variable in colouring, the ground colour being white, more or less distinctly speckled and blotched with brownish ash or brown: they measure ·7 in. by ·5 in. In some the markings are fine, in others they take the form of large obscure blotches.

Alæmon semitorquata (Smith), Grey-collared Lark.—A very abundant species on the rocky "kopjes." The male has a curious way of rising suddenly and silently from its perch on a rock, in a nearly perpendicular direction, for a height of twenty or thirty feet. Just at the summit of its flight it gives a long-drawn whistle, "phe-e-ew," not unlike that of the Clapper Lark; then, with wings nearly closed, descends in a slanting direction to another neighbouring rock to repeat the manœuvre in a few minutes' time. Reid shot one in the very middle of this singular performance, so there is no question as to correct identification of the bird; moreover, *Mirafra apiata* is not found near Newcastle, and there is no cracking of the wings as with that well-known species. The male bird is considerably larger than the female, and has the iris greyish brown; in the female it is brown.

Tephrocorys cinerea (Gm.), Red-headed Lark.—Found in abundance throughout the colony, though somewhat local and attaching itself to particular spots, as described by Layard in the first edition of the 'Birds of South Africa.' These neat little

birds are fond of the roads, or broad tracks, over the sandy portions of the "veldt." They are wonderfully tame, and frequently crouch on the approach of a horse, man, or waggon, instead of taking flight. The Kaffirs occasionally knock them over with their whips. The nest is a neat structure, not unlike that of our Sky Lark, composed of dry grass, and concealed under a tussock of grass on the open veldt. The eggs are three, frequently only two, in number, pale greenish white, freckled and blotched with brown. In a nest taken by Butler they measured ·95 by ·55 in, but these are doubtless unusually elongated, for in three nests taken by Reid the average size is ·85 by ·6 in. A young bird, obtained by Butler, which had just left the nest, was beautfully variegated above with dark brown and buff, not the least like the old bird that was feeding it.

(To be continued.)

OCCASIONAL NOTES.

Badger in Essex.—The occurrence at the present day of so shy and retiring an animal as the Badger in such a highly cultivated agricultural county as Essex is of sufficient interest to deserve a record in the pages of 'The Zoologist.' I have pleasure therefore in forwarding the following particulars of the death of one. On the 2nd April last some children who had been gathering oxlips informed an old man named Spencer, who is in the employment of my uncle, Mr. Joseph Smith, of Great Saling, as foreman, that they had found a Fox asleep on the edge of "Newpster" (New-pasture) Wood, close behind his house. A few days later they told him they had been again, and found that it was dead; but it was not till the 8th that, passing that way, he went to look, and finding that it was not a Fox, brought it home and skinned it, spoiling the skin considerably in the operation, but it has since been placed in good hands. Spencer is of opinion that it was a female, and from the worn appearance of the teeth I have no doubt that it is an old one. He says that when found it had its mouth full of grass, and lay as if it had died a natural death. There was no appearance of any wound. So far as I can discover no other Badger has been seen or heard of in the neighbourhood for many years, and I should have thought it to have been an extinct animal. It is difficult to understand how it could have lived, as the district is not very thinly populated, is almost all under cultivation, there are no large woods, and the Essex Hounds have one of their regular meets within a mile of the spot, and with those of East Essex are constantly

through all the neighbouring covers.—Robert Miller Christy (Chignal St. James, near Chelmsford).

Marten in Durham.—A female Marten was trapped on the 31st May last, at Hoppyland, about seven or eight miles west of Bishop Auckland. The last record of this rare animal in this neighbourhood is dated August 14th, 1849 (Zool. p. 2588), when a nest containing three young ones was found in North Carr Wood, on the estate adjoining Hoppyland.—T. H. Nelson (North Bondgate, Bishop Auckland).

Ornithological Notes from the Solway Firth.—The Peregrine Falcon is permanently resident, and breeds annually on our sea-cliffs. I have watched with interest a pair of these birds which nest every year near here. From some cause the eggs have not hatched the last two seasons, but last year the keeper shot the male bird, under the impression that another mate would do better. The result will, I hope, be successful, for the birds are preserved under ordinary circumstances from molestation, and there is a good chance for them here for years to come. The Peregrine also occurs among the mountains of Cumberland, thirty miles distant, and I am satisfied that the Cumberland birds come over here occasionally on their foraging expeditions, as they have several times been seen passing to and fro across the Firth. Although the distance appears considerable, yet it is a mere trifle to a Peregrine Falcon. The Merlin was formerly common, but is now rare on our moors, owing to the more strict preservation of game. The Common Buzzard is permanently resident; one pair at least succeeded in rearing their young, not far from here, in 1881; the nest was in a fir tree. Each year brings a few Rough-legged Buzzards: they are lazy birds, and I have more than once shot a duck at dusk which I have been unable to find, and next day on going for my bird have found only a lot of feathers, and the bones picked clean by a Buzzard. One day in autumn, when sitting among some rocks near the sea, a dark-coloured bird came flying past over the water, and alighted on the surface at some distance from me. I was much puzzled at first to make it out. The dark colour suggested a Petrel, and as I crept nearer and saw the beak, Phalarope suggested itself. When near enough I stood up, and the bird rose and flew landwards, passing within easy shot, when I saw to my surprise, on shooting it, it was a Starling. When swimming it made for the shore, and as struck by each wave gave a flap with its wings and struggled forward, reminding me very much of the action of a wounded Dunlin. Possibly it had been terrified by a hawk, but I am quite satisfied that the act of taking to the water was voluntary, and could easily have been avoided, as there were rocks close at hand upon which it could have perched. The Stock Dove, *Columba œnas*, breeds in holes and ledges of rocks shaded by ivy, &c., often facing the

sea; but the Rock Dove, *C. livia*, I have never yet met with on this part of the coast, though our sea-cliffs are in many places tenanted by stray pigeons from the farm-houses. These birds breed in the caves, and some of them very much resemble the wild Rock Dove, and might be mistaken for it. The Ring Dove, *C. palumbus*, often nests in ivy and other bushes on our sea-cliffs, as well as more commonly inland. I have several times found its nest in low bushes in coppices, within twelve or eighteen inches of the ground. I have met with two instances of the occurrence of the Virginian Quail, *Ortyx virginianus*, near the Solway. One I remember very well, a good many years ago, being shot while picking about among the refuse caused by threshing operations, near Allonby, in Cumberland. The other was at Dalbeattie, in Kirkcudbrightshire, some years ago, and had been several times seen in the neighbourhood before it was finally obtained. The Golden Plover was scarce on the coast last winter, owing no doubt to the mildness of the season. We usually have a few Grey Plover at certain places along the coast. Last winter I did not see one, though probably a few may have occurred at some stations. The Lapwing usually disappears entirely during December and January, but last winter many remained with us. The Turnstone and Purple Sandpiper were both decidedly more plentiful than usual, though nowhere common, and remained in about the same numbers throughout the winter. A Forked-tailed Petrel, *Thalassidroma Leachii*, came ashore and was picked up on the 6th December last. It was rather spoiled, but owing to its rarity I stuffed it, and it is now in my collection. Another was picked up some miles to the westward about the same time; and a Petrel seen on the wing near shore by a friend of mine might probably belong to this species, which seems to have occurred at many other places in Great Britain about the same time.—J. J. Armistead (Douglas House, Dalbeattie, N.B.)

Kentish Plover in Sussex.—This bird breeds on the Sussex coast between Newhaven and Beachy Head. Each pair appears to be confined to a limited district on the shingly shore, and if disturbed fly but a short distance and soon return to the spot left. I have observed a pair on each side of Seaford for years. The pair on the eastern side of the town were this year breeding in the old spot, notwithstanding that last year a sea-wall was made from the eastern cliff to the town, and this year a road is being formed within the wall, and several roads leading from the town to the sea-side. A number of workmen are employed in removing large quantities of chalk from the cliff, carting it along a tramway, and throwing it over the embankment to make the road. In addition, there are more than a dozen men engaged in breaking up the wreck of a ship of 2000 tons burden, making as much noise as one would hear in a foundry. Then there are numerous visitors to the wreck and to the beach. Yet in the midst of all

this bustle and turmoil I never failed to see these birds flitting across the shingle, or perched on the highest stone on the look out for the safety of their young. That they were breeding I think there can be no doubt, as two of the young of the western pair were seen running on the beach.—J. Jenner Weir (Blackheath).

Marsh Warbler near Taunton.—After hearing of two nests with eggs of the Marsh Warbler being taken this season on the north side of this town, and thinking that other birds may be breeding in or near the same spot as the nest and eggs were found in 1877 (on the south side of the town), I went with Mr. F. Morle in search in this neighbourhood for several mornings and evenings in succession. On the evening of June 30th our researches were rewarded, for very close to the old spot (indeed but a few paces distant from the site of the 1877 nest) my friend came upon a nest containing four beautiful eggs. The nest, which was attached to two stalks of cow-parsnep and one of the nettle, is much more compact and somewhat deeper, and built higher from the ground, than the two found earlier in June; both which nests, with the eggs, now in the well-known collection of Mr. John Marshall, of Belmont, I have had the pleasure of examining. We spent some time in watching the birds, to make ourselves thoroughly acquainted with the song, which is somewhat similar to that of the Blackcap, having very few of the harsh notes of the Sedge Warbler, and with now and again a trill of liquid notes very like that of the Nightingale, but softer, which I have never noticed in the Reed or Sedge Warbler. Altogether the song of the Marsh Warbler is very sweet, and distinct from either.—F. Stansell (19, Silver Street, Taunton).

Woodcock's mode of carrying its Young.—Since Mr. Harting's article on this subject appeared in 'The Zoologist' in November, 1879, I have heard the following statement made by James MacEvoy, an intelligent man whom I believe to be a trustworthy witness, and who is constantly employed in the extensive oak woods at Brittas, Queen's County, where Woodcocks habitually breed. I have refrained from communicating it until it should receive some corroboration. I am glad to hear from Mr. Reeves, of Capard, in the same part of the country, that he will state his own experience of the Woodcock's mode of carrying her young. MacEvoy told me that one day, while he was quietly employed in the Brittas woods, he saw a Woodcock remove three of her young in succession. It does not appear that she was alarmed or hurried, but seemed to be removing them deliberately, as some little interval elapsed between each of the removals, which were all made in the same direction. He distinctly stated, of his own accord, that he saw the old bird support her young, not only with her feet, but with her bill, which she pressed inwards against them towards her breast. If this be so, it explains Scopoli's statement,

"*pullos rostro portat*," while at the same time it confirms what the Rostrevor correspondent observed, that a Woodcock "had a young one pressed between its breast and feet." (See 'Zoologist' for November, 1879, p. 439.) None of these observers, however, corroborate the position of the old bird in the illustration, which shows the bird with outstretched beak grasping her young one in her claws. A little reflection will show that the Woodcock, whose prominent eyes are placed so far back in her head, is more fitted than most birds to direct her flight while her bill is pressed downwards in the peculiar position described by MacEvoy. On the 27th May last the Rev. W. W. Flemyng and I found a Woodcock sitting on three eggs, all of which were addled, in the oak woods near Portlaw, where the same evening I saw three other Woodcocks flying out to feed, uttering a sharp little note. Woodcocks breed frequently in these woods, as well as at Coolnamuck, also in the valley of the Suir.—Richard J. Ussher (Cappagh, Co. Waterford).

Habits of the Woodcock, as observed in Ireland.—Having had ample opportunity for watching the habits of this bird, I give for your readers my experiences on the subject. On the Sleive Bloom range the largest flight comes about the first week in October, and, after stopping until January, or rather end of December, we have very few until March. Should the weather be open, I have frequently found them in numbers in the heather and the wet rushy flats on the mountains. The woods being full of springs, afford them, should frost set in, good feeding for some time, but, should the frost last for a long time, they leave for the banks of the Banno river and the large wet ditches, which are very numerous in the lower part of this county. Many remain and breed here, and there is hardly an evening that four or five do not fly, calling, over the house. I have seen them moving their young frequently, but never by the feet alone. The first time I was witness to this fact was in June, 1876. Whilst walking very early in the morning I saw a bird fly rapidly across me, holding something in a peculiar manner. I waited for some time, when I saw the bird fly back in the direction she had come, and, as I at once perceived her to be a Woodcock. I went to the spot whence she rose: on the ground lay two little fluffy birds, the largest part of them being their head and eyes. Anxious to see would she return, I lay down close under a holly bush; in a short time she came back supporting a little one, not only with her feet, but with her bill pressed over the bird against her breast. This mode of carriage I have frequently seen, certainly since then five times, but I have never seen the bird carry her young as in the illustration (Zool., 1879). She may do so; I only state what I have myself observed. One of the prettiest sights I ever saw was an old Woodcock teaching her four young ones to fly. It was some time in July, 1878. They made flights just like a clever skater

cutting figures on the ice, and then dropping down suddenly, dodging in and out of trees, and flying in circles and triangles. I watched them for nearly half an hour, and their morning parade being ended they collected together. Curious to say, I have never seen but one old bird at a time. As to their extraordinary liking for a peculiar locality, there is a small stream within ten yards of the carriage-drive, and planted; the centre of it is soft and muddy. It generally holds a cock. For curiosity's sake, on the 17th July, I walked down to try for one, and found two, evidently residents. There must be something very good there to attract them in this way.—R. E. Reeves (Capard, Rosenally, Queen's Co.).

Notes from the Northumbrian Loughs.—The Loughs (pronounced Luff) of Northumberland, or as they are there called the Lakes, are well worth visiting both for Natural History and scenery. On June 20th I left Newcastle by an early train for Bardon Mill Station, on the Newcastle and Carlisle Railway. By half-past nine we had reached the first lough, very appropriately called Crag Lough. On the north side of the tarn the land slopes gently away, but on the south side high and steep cliffs rise almost from the edge of the water, on which a pair of Coots with their young were swimming. A solitary pair of Black-headed Gulls served to remind us that we were not far distant from a gullery. One of my companions caught sight of a hawk as it rose from the ground, but failed to identify it. We found it had been feeding on a Rock Dove, which was still warm. These doves, as well as Jackdaws, breed in great numbers amongst the crags. Climbing another hill we visited Greenlee Lough, which is one of the largest. In it was a Coot's nest with five eggs, a few feet from the bank. A pair of Sandpipers evidently had their nest somewhere near the edge of the water, from the noise and fuss they made on our approach. Three fine Blackcocks rose from the thick herbage of fern and bilberry which clothes the steep ascent on the south side. They winged their way up the length of the lough, and were at last lost to sight in the distance. Following the general direction of flight which some Black-headed Gulls took, brought us to Hallypike Lough, which is very small, but by far the most interesting, as being a breeding haunt of these birds. The sight, looking down the hillside, was one to be remembered. The small mountain tarn was a living mass of white bodies which, as we drew nearer, rose in clouds, uttering their cries. All that could do so, circled overhead, whilst the young scuttled to the rushes or gathered together in the middle of the pool. A few yards from the south side was an island, to which I waded out middle-deep in mud and water. On reaching the island I was disappointed to find no firm ground, but merely trampled down rushes, with a nest every few feet. The nests were masses of filth, baked dry by the sun. Slowly drawing myself up I succeeded in getting a knee into one nest, and, by dint of lying flat on my face over a reeking gulf of dirt, I laid my hands on two nests with

three and two eggs respectively, much incubated. There seemed very few eggs, but plenty of young in the down. On our way to the Roman road we saw Red Grouse, Redshank, Snipe, Curlew, &c. The Roman road follows alongside of the Roman wall, which in many places is quite a prominent feature in the landscape.—Edward J. Gibbins (The Graig, Neath).

Wildfowl breeding at Rainworth, Notts.—Though last winter was the worst one I ever knew for wildfowl in this district, we have a good many ducks nesting with us. There are about sixteen pairs of Tufted Ducks which were sitting June 8th, though there is one on the island, within fifteen yards of my front door, which only began to sit on June 15th; we also have several pairs of Teal and common Wild Duck, and when driving over the forest I saw, on a pond of about six acres, five pairs of Shovellers which were evidently nesting, it being the middle of May. I hear from my keeper that he thinks there are six or seven Woodcocks also nesting in the big wood near here, and there are five Snipes' nests in a small bog not far off.—J. Whitaker (Rainworth Lodge, near Mansfield).

Curious Site for a Flycatcher's Nest.—In an orchard adjoining a farm near here a tin laving-pot was hung upon the branch of an apple tree, about six feet above the ground. The orchard is used as a drying-ground, and several clothes-pegs had been thrown into the laving-pot, to suit the convenience of the moment, on a washing day. When the owner of the clothes-pegs went to take down the laving-pot, it was found that a pair of Spotted Flycatchers had taken possession of it, and were building their nest, cleverly interweaving it amongst the pegs. The pot was replaced, and the little builders left undisturbed; the nest was soon completed, and when I saw it about a fortnight ago, the hen bird was sitting upon four eggs, which have since been hatched. One of the birds takes up a position upon a clothes-line stretching between two trees, and from this vantage-point keeps a sharp look-out for passing insects.—T. H. Nelson (North Bondgate, Bishop Auckland).

Short-eared Owl breeding in Cambridgeshire.—Last year I had the pleasure of recording in 'The Zoologist' (p. 336) the fact that the Short-eared Owl had bred on Wicken Fen, near Cambridge. On the 24th of June last I was again on the Fen, and, seeing an old man cutting reeds, I inquired of him if he ever found Owls' nests there. He told me that about three weeks back, his "mate" had found a nest with several hard-set eggs, which he took, and laid them on a heap of sedge, but the Crows came and destroyed them. The old bird was either seen or caught on the nest. I could get no further information than this, but I should think the old man might be trusted to know an Owl when he saw one. If so, it seems probable that at least one pair still breeds regularly on the Fen.—R. M. Christy (Saffron Walden).

Unusual Site for a Chaffinch's Nest.—On June 17th I examined the nests of several Swallows in outbuildings on a farm at Stocksfield, near Newcastle. In several nests I found eggs, some of which were much incubated. My curiosity was aroused by seeing a quantity of moss inside an old Swallow's nest on a beam. Climbing up I found that a nest of moss, somewhat loosely put together, lined the mud platform of the Swallow's, and contained several young, some days old. By the shape of their bills I at once saw they were not Swallows, but, thinking that a Sparrow had probably made use of the nest, I thought no more of it. Shortly afterwards, repassing the nest with a friend, I pointed it out to him; at the same moment we spied a female Chaffinch perched beside the nest with food in her mouth. It required a second look to assure us that our eyes were not mistaken, but so it was; a Chaffinch had built her nest and hatched her young in a Swallow's nest in a shed.—Edward J. Gibbins (The Graig, Neath).

Merlin striking at Cage-bird.—On the morning of July 15th Mr. Phillips, dog-fancier, of Ship Street, Brighton, saw a bird make a swoop at a Siskin in a cage hung out in his back yard. So determined was it that it made four swoops before it was caught, although several attempts were made to catch it before it was finally secured. It proved to be a Merlin. The bars of the cage were quite bent from the force of the onslaught. I may add that the Merlin is by no means a common bird here, and Ship Street is nearly the centre of the town.—Herbert Langton (Brighton).

Reed Warbler and Nightingale in South Wales.—The accompanying Reed Warbler's nest was forwarded to me by Mr. C. J. Young, who states that he found the bird breeding abundantly in marshes about Scilly, and Cadoxton, near Barry Island, Glamorganshire, this summer. He also states that he heard two Nightingales singing last May near Leekwiths, Glamorganshire.—J. Young (64, Hereford Road, Bayswater).

Teal and Marsh Harrier nesting in Glamorganshire.—During the spring, nests of the Teal, containing eggs, were found on the Crymlin Burrows, near Swansea, and on the Crymlin Bog adjoining. One of the keepers (an intelligent man who has studied birds all his life) tells me that a pair of Marsh Harriers have been and still are to be seen. He has no doubt that they have nested there.—Edward J. Gibbins (The Graig, Neath).

Common Buzzard in Nottinghamshire.—I saw one of these now rare birds flying round in circles over a cornfield near my house. It continued on the wing for a quarter of an hour, twice dropping down into the corn, but I could not perceive that it captured anything: it then sailed away over the forest. I heard of it being seen soon after at Newstead.—J. Whitaker (Rainworth, near Mansfield, Notts).

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Zoological Society of London.

June 20, 1882.—Dr. A. Günther, F.R.S., Vice-President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of May, 1882, and called special attention to the following recent acquisitions:—four Pigmy Hogs, *Porcula salvania;* a Mediterranean Seal, *Monachus albiventer;* two male Argus Pheasants, *Argus giganteus;* a Koala, *Phascolarctus cinereus;* a Jackass Penguin, *Spheniscus magellanicus;* and a fine pair of the Great Ant-eaters, *Myrmecophaga jubata.*

The Secretary exhibited a series of the diurnal and nocturnal Lepidopterous insects bred in the Insect House in the Gardens during the present season, and called attention to several specimens of clear-winged Moths (*Sesiidæ*), a group of insects which had not before been exhibited in the Insect House. The cocoon of *Cricula trifenestrata*, together with the imago, was also exhibited.

Mr. W. A. Forbes made remarks on the presence of a rudimentary hallux in certain birds—the Albatrosses and two genera of Woodpeckers (*Tiga* and *Picoides*), commonly described as being three-toed, and exhibited preparations showing its condition in the birds in question.

Prof. Owen read the twenty-fifth of his series of memoirs on the *Dinornis*. The present communication gives a description of the head and feet, with their dried integuments, of an individual of a species proposed to be called *Dinornis didina*. These specimens had been obtained by Mr. H. L. Squires, at Queenstown, South Island of New Zealand, and being parts of one individual tended to elucidate in an unlooked-for degree the external characters of the Moa.

A second communication from Prof. Owen contained some observations on *Trichina spiralis*.

Prof. E. Ray Lankester gave a description of the valves of the heart of *Ornithorhynchus paradoxus*, and compared them with those of man and the rabbit. Prof. Lankester also made some observations on the *fossa ovalis* of the Monotremes.

Prof. Huxley read a description of the respiratory organs of *Apteryx*, which he showed did not differ fundamentally from the Avian type, and pointed out that neither of the structures that had been termed diaphragms in the *Apteryx* was really in correspondence with the Mammalian diaphragm.

Mr. W. A. Forbes read the sixth of his contributions to the anatomy of Passerine birds. In the present communication the author showed that *Xenicus* and *Acanthisitta*, hitherto considered to be allied to *Certhia*, *Sitta*,

and *Sittella*, were really mesomyodian forms, most nearly allied perhaps to *Pitta*. The discovery of such low forms of Passerine birds in New Zealand was a fact of considerable interest, none of the allied groups being at all represented there at the present day.

A communication was read from Mr. Sylvanus Hanley on the shells of the genus *Leptomya*, to which was added the descriptions of two new species.

Mr. Sclater read a note on Rüppell's Parrot, and showed that the more brightly-coloured individuals, ordinarily supposed to be the males of this Parrot, were really the females.

A second paper from Mr. Sclater gave the description of two new species of the genus *Synallaxis* from the collection of Messrs. Salvin and Godman.

A communication was read from Prof. M. Watson, containing an account of the muscular anatomy of *Proteles*, as compared with that of *Hyæna* and *Viverra*.

Mr. Oldfield Thomas read a paper containing the description of a new species of Rat from China. The specimens upon which the author had founded the description had been sent by the Abbé Armand David to M. Milne-Edwards, of Paris, who had placed them in the hands of Mr. Thomas for identification. The author proposed to call this Rat *Mus Edwardsi*.

A communication was read from Mr. E. W. White, of Buenos Ayres, in which he gave an account of the birds collected by him in the Argentine Republic.

Mr. R. Bowdler Sharpe read the descriptions of two apparently new species of *Erythropygia*, one from the Zambesi, the other from the Congo River, which he proposed to call respectively *E. zambesiana* and *E. ruficauda*.

A second paper by Mr. Sharpe contained the description of a new Flycatcher, which had been obtained by the late Governor Ussher on the Gold Coast. The author proposed to call it *Muscicapa Ussheri*, in acknowledgment of the services which its discoverer had rendered to ornithological science.

A communication was read from Mr. F. Moore on the Lepidoptera collected by the Rev. J. H. Hocking, chiefly in the Kangra District, N.W. Himalaya. The present communication, being the second on the same collection, contained the descriptions of seven new genera and forty-eight new species. An account of the transformation of a number of the species was also given.

This meeting closes the present session. There will be no more scientific meetings until the commencement of the session 1882-83, in November next.—P. L. Sclater, *Secretary*.

NOTICES OF NEW BOOKS.

Matabele Land and the Victoria Fall; a Naturalist's Wanderings in the Interior of South Africa. From the Letters and Journals of the late Frank Oates, F.R.G.S. Edited by C. J. Oates, B.A. London: Kegan Paul & Co. 8vo, pp. 370. With maps and illustrations.

If we have delayed until now to notice this excellent book of travels it has been rather for want of space to review it than because we have had any doubt as to its merits. The author was one of those young and ardent spirits who, had he not underestimated his own powers of endurance and the difficulty of the task he had set himself, might have lived to attain the height of his ambition. Unfortunately for himself he neglected the advice of older and more experienced travellers than himself, and fell a victim to African fever at the early age of thirty-four.

The intention which he had formed in setting out for South Africa was to reach the Zambesi from Natal, and see the Falls, and, if possible, visit some of the unexplored country to the north of that river. In the latter hope he was disappointed, and the numerous difficulties encountered in realising the former part of his project serve to illustrate some of the many obstacles to be met with in African travel. He had to cope not only with unfavourable conditions of climate, scarcity of food, and difficulty in procuring bearers, but experienced endless opposition from what his editor has termed "the obstructiveness of native character."

The King of Matabele Land, Lobengula, the son of Mosilikatze, who conquered the country, is "absolute monarch, feared and obeyed far and wide"; and though well disposed to Europeans travelling through his dominions, is very exacting in his demands of tribute before giving the necessary permission to proceed, and appears to dread nothing so much as the death of a white man from sickness in his territory, and the introduction of cattle disease. On one or the other of these pretexts, leave to proceed is often withheld until the rains fall, and the traveller threatened with death and confiscation of his goods should he advance after notice to the contrary.

Four distinct attempts did our traveller make at various times to reach the Zambesi Falls, and in each of the first three was he destined to disappointment. His first effort was made in September, 1873, his fourth journey undertaken towards the close of the following year; nor was it until the last day of 1874 that he actually beheld the white spray of the great cataract breaking through the trees upon the rivers beneath.

It is to be regretted that from the time of his reaching the Zambesi till the date of his death, five weeks afterwards, the entries in his journal are of the briefest description, for it has so happened that the various accounts of these Falls furnished by previous travellers—Livingstone, Baldwin, Baines, and Chapman—were written in the dry season; whereas the date of Frank Oates's visit, *viz.*, at the height of the rainy season, the river was at its fullest, and the vegetation at its best. Unfortunately our traveller delayed until too late committing his impressions to paper in the shape of a written description, and only a few pencil sketches and two water-colour drawings (reproduced in chromo-lithography) are available to convey an idea—doubtless very inadequate—of the view which delighted him on reaching that goal of his ambition.

The river for some distance—at least two miles—above the Falls is of great width, and flowing between hills some three or four hundred feet in height, presents to the eye a smooth open surface, dotted over by a number of picturesque tree-covered islands. Where the Falls occur the river is upwards of a mile in width, and the Falls extend the whole of this distance, their line broken at intervals by dark projecting buttresses of rock, forming, some of them, small islands with trees upon their tops; whilst others of much less size present merely a bare and jagged surface. The actual height of the Falls, as estimated by Livingstone, is about 360 feet from the top of the precipice to the surface of the water in the abyss; the columns of spray which are driven upwards by the rush of air from the channel as the water descends into this narrow space, ascending to a height variously estimated at from six to eight hundred feet. It is these vapour clouds which, visible at a distance of upwards of twenty miles, as distinctly observed by Livingstone, mark the position of the Falls long before the traveller approaches them. Frank Oates distinguished them at a distance of about eighteen miles,

and his followers heard the roaring of the water at that distance, though he was not sure of doing so himself.

Comparing the Falls with those of Niagara, Livingstone points out that they are twice the height of the latter; whilst in the amount of water Niagara probably excels, though not during the months when the Zambesi is in flood.

It is unfortunate that no general view of the Falls, except a bird's-eye view from the high ground some miles distant, can be obtained, owing to the vegetation on the south side of the fissure, and the dense clouds of spray rising from the chasm. But for this, says Chapman, the Victoria Falls, presenting one unobstructed view, would not only have been the most magnificent, but the most stupendous, sight of the kind on the face of the globe. No wonder, then, that Oates should have been fired with a longing to visit them.

We have referred to the difficulties which he encountered ere he accomplished this, and to the several attempts and failures which only served, it would seem, to stimulate him to still further effort. Under all these difficulties, however, he found much to divert him in an observant study of the animals and plants, of which some new form was daily presenting itself to his eyes. His devotion to Natural History beguiled throughout his journey what might otherwise have proved many a weary march. He found opportunity not only to note the various species met with along the route, so far as he or his companions were able to identify them, but also to make collections which, on future examination by specialists at home, were found to contain several new and undescribed species. Indeed, the Appendix to this volume, which contains Reports by well-known naturalists on the various collections made by Frank Oates, may be regarded as the most valuable portion of the book. Thus we have a chapter on Ethnology by the late Professor Rolleston, based on his examination of the crania and other remains of Bushmen collected by Oates; a chapter on Ornithology by Mr. R. B. Sharpe, in which two new birds are described and figured—a Wood Shrike, *Bradyornis Oatesii*, and a Chat, *Saxicola Shelleyi*. Mr. Sharpe remarks that the collection of birds containing 213 species represents without doubt a very fair idea of the avifauna of the parts of the Transvaal and Matabele countries through which Mr. Oates travelled, and is of great utility by reason of the careful way in

which every specimen is labelled with locality, date, and other particulars relating to its capture.

In a report on Herpetology two new snakes are described and figured by Dr. Günther, *Coronella tritœnia* and *Dryophis Oatesii*.

Professor Westwood, reporting on the insects, remarks that "the collection, although not of considerable extent, fortunately comprises examples of many of the very peculiar groups and genera characteristic of the greater part of the African continent." His report is illustrated with four beautiful plates, prepared by his own hand, in which some eighteen species of Lepidoptera and Coleoptera are figured, as also the dreaded Tzetze fly.

The plants collected by Oates have all been named at Kew under the direction of Professor Oliver, whose report thereon is printed in the present volume, with coloured plates of two novelties, *Anthericum Oatesii* and *Adiantum Oatesii*, originally described by Mr. J. G. Baker in the 'Journal of Botany.'

It must have been no slight undertaking to prepare this volume for the press, and perhaps no one but a brother with that intimate knowledge of the traveller's disposition, tastes, and habits of life could have interpreted his journals and letters so admirably as the editor in this case appears to have done. For the story of the journey seems complete and well told, and it is difficult to realise the fact that it is told second-hand, albeit that many passages are in the traveller's own words.

The editor has certainly performed his part well, and making due allowance for a partiality which naturally arises from brotherly love and affection, we doubt if any reader of the book will gainsay the estimate which his biographer has formed and expressed of the manly character of the author and his persevering energy in the cause of progress and scientific research.

Notes and Jottings from Animal Life. By the late Frank Buckland, M.A. 8vo, pp. 414, with illustrations. London: Smith, Elder & Co. 1882.

From amongst the numerous articles contributed by him to the columns of 'Land and Water,' the author, shortly before his death, selected for republication in book-form those which are

now brought together under the above title. Whether they were all worth reprinting is a question which we will not venture to decide. From a utilitarian point of view they are certainly not all of equal merit. Some, from the information which they afford on out-of-the-way subjects, may be said to have a practical value, but the majority of them, although pleasant reading enough, can scarcely be said to advance the cause of Natural History, while many of them (*e. g.*, John Hunter's Chair, Relics in the Ashmolean Museum, Sir Walter Scott's Home, and the Waxworks in Westminster Abbey) have no sort of connection with the title of the volume.

The amusement which the reader will derive from its perusal is due to the originality of the author's style, to a felicitous mode of describing his own experiences, to the quaintness of his illustrations, and, above all, to the inexhaustible vein of good humour which flows throughout the book. An author who writes in this strain can hardly fail to please, whatever may be the practical value of his remarks.

Amongst the best chapters in the book perhaps may be named those on Collecting Salmon Eggs for Australia and New Zealand, the Cruize of the 'Jackal,' on the Herring Commission of Inquiry in 1877, and London Birdcatchers. An amusing account also is given of Lord Bute's Beavers, with a description of the author's visit to their home in the Isle of Bute. These animals, originally four in number, were turned out in the autumn of 1874. The largest pair from France disagreed with the smaller pair from America, growling and flying at them when they met. On the death of one of the latter it was found to measure three feet four inches in length; the tail ten inches; and the weight about twenty pounds. Another, which subsequently died, measured three feet three inches, and weighed twenty-two pounds and a half.

In January, 1875, Lord Bute obtained eight more Beavers from Germany, which had been previously imported from America. They passed through London, where they enjoyed a few days rest at the Zoological Gardens, and then travelled *viâ* Glasgow to the Isle of Bute, being fed on Indian corn, carrots, biscuits, and willow branches, of which they seemed very fond. In September, 1877, they were visited by Mr. Buckland. So far as could be ascertained there were then twelve, with one or more

young ones in the house which they had built. The keeper in charge thought that Beavers have two litters in the year.

After inspecting some of their dams, Mr. Buckland wrote :— "It is evident that they work with a design, I may even say with a definite plan. The trees have been cut down in such a manner that they shall fall in the position in which the Beaver thinks they would be of the greatest service to the general structure, generally right across the stream. The cunning fellows seem to have found out that the lowest dam across the river would receive the greatest pressure of water upon it. This dam therefore is made by far the strongest. They seemed to have packed, repaired, and continually attended to the tender places which the stream might make in their engineering work. A fact still more curious—the custodian of the Beavers pointed out to us a portion of the work where the dam was strutted up and supported by the branches of trees extending from the bed of the stream below to the sides of the dam, forming, in fact, as good supports to the general structure as any engineer could have devised."

When dissecting one of the Beavers that died Mr. Buckland was much astonished at the small size of the gullet, which, he says, was not large enough to admit the little finger. He observed the same peculiarity in the œsophagus of the Otter.

A young Otter, which he obtained at Cardigan, and which lived some time in confinement, enabled him to make some observations on its actions, which may be here transcribed :—

"When the Otter is pursuing a fish it is interesting to observe his manner of swimming. He does not use his fore and hind legs, as does a horse or dog, but folds his front paws alongside his body while he strikes out vehemently with his two hind legs. This causes his movement to be apparently by jerks, but the jerks are so exceedingly rapid that the creature progresses in the water with extreme velocity, almost as quick as a pike when he darts at his prey.

"The canine teeth are very trenchant, and almost scissor-like in their action ; they are conical in shape, much sharper than the canines of a dog or cat.

"When a fish is caught the Otter immediately transfixes it through the head with his sharp canines, the action of which is such that the fish is held by them as in a rabbit-trap, and cannot escape. The Otter holds the fish for some little time

between its canines before he begins to eat, waiting till it is quite dead and quiet. In eating he never uses his canines at all, but bites at the fish with the side of the mouth only. The molars and the præmolars are also very sharp, but capable of crushing any substance into very small bits,"—a process which seems necessary from the very small size of the gullet.

We might cite other chapters in which the reader will find much to amuse him, and much that is very original, but want of space precludes further quotation. The book forms a pleasing souvenir of one who has left behind him many friends, and whose name while he lived had become quite "a household word."

The Micrographic Dictionary: a Guide to the Examination and Investigation of the Structure and Nature of Microscopic Objects. By J. W. Griffith, M.D., and Arthur Henfrey, F.R.S. Fourth Edition, edited by J. W. Griffith, the Rev. M. J. Berkeley, M.A., and T. Rupert Jones, F.R.S. 8vo. Parts I.—XII. In progress. London: Van Voorst. 1881—82.

As a means of affording amusement, or as an aid to scientific research, the use of the microscope is daily becoming more general, and as a natural consequence the number and importance of publications bearing on the subject are also daily increasing.

The manual, of which twelve parts are now before us, has long since established itself as a valuable book of reference, and no better testimony to its utility exists than the fact that it is now in a fourth edition.

It may be briefly stated that the object of this work is to guide the microscopist in his researches, to give him a notion of the manner of making those researches, also some account of the characters, microscopic structure, and properties of objects in general, and to show how he may most easily arrive at satisfactory results.

Prefixed to the Dictionary is a long Introduction in which useful hints are given as to the principles which should guide in the selection of a microscope and the accessory apparatus; and this is by no means unimportant, because at the present day a

large number of instruments are sold which, though well calculated to afford amusement, are utterly valueless for the purpose of scientific investigation. The various parts of a microscope are described seriatim, and that which is useful distinguished from that which is not absolutely necessary to the student. A method of instruction is also indicated:—

"Next to the improvement effected in the optical construction of the microscope during the last few years, must be placed that of the method of investigation. Formerly almost all microscopic bodies possessing different forms and appearance were considered distinct beings, and were named accordingly. By the present method, prolonged observation is adopted to follow the changes which the individual bodies undergo; whence it has resulted that numbers of them have been found to be simply different stages of each other. Thus a large amount of useless nomenclature and confusion is being removed from the domain of the microscopic world." (*Introduction*, p. xiii.)

It was a happy thought on the part of the authors thus instructively to pave the way for a proper use of their work.

With a view to test the nature of the information conveyed by it, we have turned at random to *Acheta*, *Aphis*, *Blood*, *Bone*, *Cell*, *Chlorophyll*, *Crustacea*, *Desmid*, *Diatom*, *Eye*, and *Fungi*, and have been surprised, not only at the amount of information given under these different headings (some of the subjects extending over several pages), but also at the exactness and perspicuity of many of the definitions.

The labour of preparing such a work must have been very considerable, and it must be gratifying both to authors and publisher to know that they have supplied, in so practical and efficient a form, a want which has been long felt by scientific men.

It may be well supposed that fifty-three plates (many of them coloured) and more than eight hundred woodcuts (when well executed as these are) add considerably to the utility of such a work.